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POLISH INSTITUTE DEVELOPS METHOD OF DELINEATING POTASSIUM; NOTES MINERAL RESOURCES AND EXPLORATION IN POLAND

USE GEIGER-MULLER COUNTERS TO LOCATE POTASSIUM DEPOSITS -- Krakow, Nafta, Vol VII, No 4, Apr 51

The Zaklad Geoanalityki Instytutu Naftowego (Geoanalytical Research Center of the Petroleum Institute), while conducting research in the electronic delineation of petroleum bore holes, has developed a method of delineating potassium.

Natural potassium, regardless of derivation, contains 0.012 percent of the radioactive isotope K^{40}. This isotope emits 80-percent beta particles and 12-percent gamma photons. This proportion is constant and characteristic of potassium. On the basis of this characteristic behavior, it can be more or less accurately determined whether the radioactivity of an examined sample is caused by potassium only or by the nuclear reaction of other elements.

To measure the correlation, samples of potassium bromide were used with beta radiation plotted against one axis and gamma against the other. Linear correlation was shown to exist.

The presence of potassium was indicated on the basis of the amount of beta radiation measured. Thin-walled aluminum counters, 60 millimeters long and 18 millimeters in external diameter, were used. The impulses were counted by a mechanical recorder. The counter was enclosed in a protective case to eliminate impulses from the surroundings. In the experiment a sample reduced to powder and dried was placed around the counter in the form of a cylinder. The thickness of the sample was not more than 0.15 millimeters. Because of the small size of the counter, samples weighing up to one gram were used.

By this method, amounts of about 20 milligrams of potassium could be determined with measurements taken for 60 minutes, and with a statistical error of minus 0.5 impulses.

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The density of the sample, because of absorption, has an effect on the measurement of beta radiation. In a sample having a thickness of 0.15 millimeters, the affect of absorption is very small and produces no distortion in analyses of samples of varying densities. The instrument was calibrated on the basis of KBr. For testing the hypothesis, samples of KNO_4, $KMnO_4$, and $K_2Cr_2O_7$ were used.

DISCOVERS NEW POTASH DEPOSITS -- Berlin, Nachrichten fuer Aussenhandel, 9 Dec 50

The Warsaw Institute for Geological Research has discovered new potash deposits in Kujawy.

DISCOVER AMBER DEPOSITS -- Berlin, Nachrichten fuer Aussenhandel, 27 Jan 51

In the course of well-digging operations in Kisielce, pure amber in chunks of approximately 2 kilograms was discovered at a depth of 16 meters. The search is being continued since sizable amber deposits are likely to be found in the same region.

LISTS MINERAL RESOURCES OF DOLNY SLASK -- Wroclaw, Dolnoslaski Informator Gospodarczy, 1947

Metallic ores in Dolny Slask are, for the most part, exhausted. The most important deposit is the magnetite deposit in Krzyzatka, near Jelenia Gora. This mine was partially activated in 1947 and produced about 2,000 tons of iron ore monthly. Confirmed deposits are estimated at 288,000 tons, plus probable deposits of 211,000 tons. The Wilcza iron-ore mine near Zlotoria is being prepared for activation. Its highest prewar production was over 15,000 tons annually.

Copper-bearing Permian shales are found in Zlotoria and Boleslawiec but these have only 1-2 percent metal content. There are small deposits of nickel in Dolny Slask. The Szklary nickel mine in Zabkowice Powiat was being reconstructed in 1947. There is also a chromium mine near Sobotka. Arsenic-ore mines in Zloty Stok, Zabkowice Powiat are already in operation.

Basalt occurs near Luban, Zlotoria, and Strzegomia in excellent quality for building railroad beds and for road surfacing. The monthly production is about 50,000 tons.

Porphyry and melaphyre deposits are found between Kamienna Gora and Klodsk. A large quarry of melaphyre has been activated in Gluszyca Gorna near Walbrzych.

Sandstone occurs near Barda, Walbrzych, Lwowek, Jarow, Nowa Ruda, Radkow, Boleslawiec, Zlotoria, and Klodsk. Limestone found north of Lwowek is used for lime and cement.

Gypsum occurs in Lwowek and Luban powiats. Lwowek now produces 750,000 tons of gypsum monthly. Sand for glass making occurs in Zary and Zagan powiats, and near Kamienna Gora.

Considerable deposits of barite are found near Walbrzych. Production in 1947 was about 200 tons monthly.

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Magnesite, important for the production of refractory materials and metallic magnesium, occurs in considerable quantities near Sobotka, Zabkowice, and Bardo. Prewar production was about 22,000 tons annually. Because of the destruction of the mines in Szklary and Kojancin, production in 1947 was barely 700 tons monthly.

Extraction of quartz schist in Strzelin Powiat by 1947 had already reached the prewar rate of 17,000 tons annually. The quality is excellent for lining metallurgical furnaces and coke ovens.

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